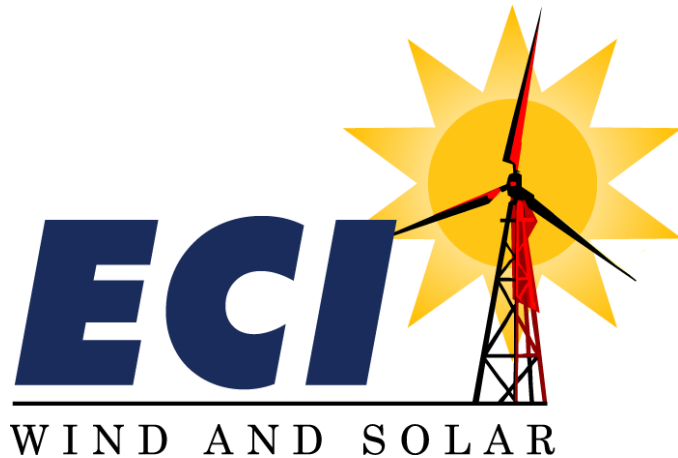


# Small Wind Power Systems in Indiana

WIndiana '09



Eric Cotton

# Small Wind Energy in Indiana:

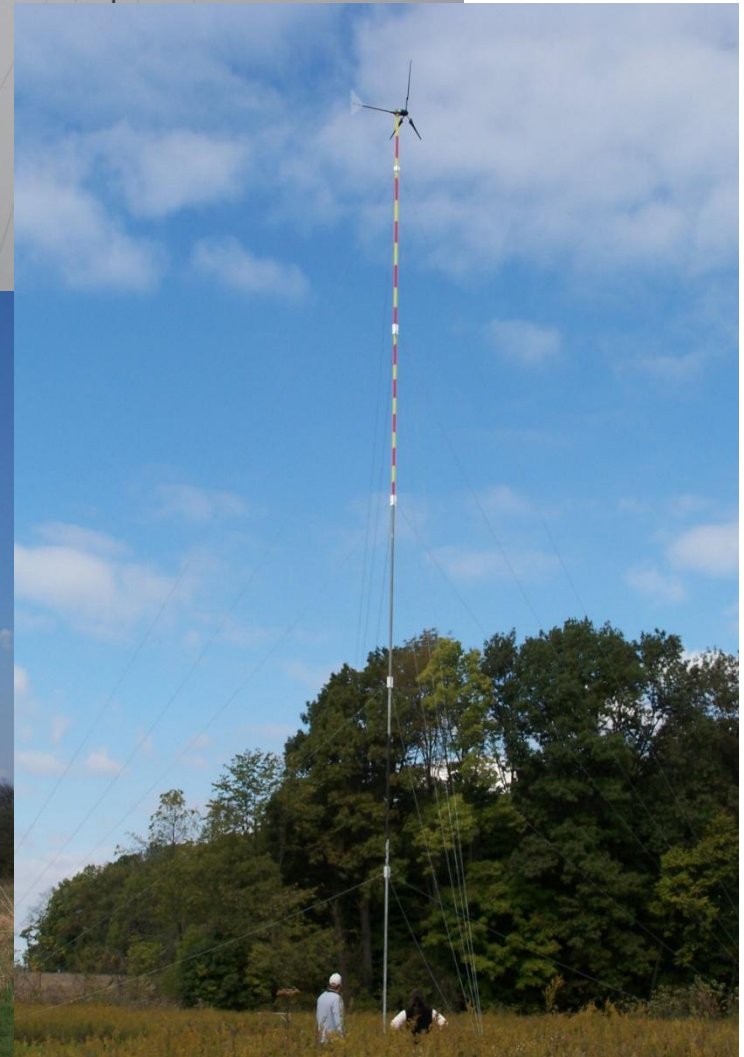
- ▶ Scope of small wind in Indiana:
  - Sizes 900 Watts – 20KW
  - Rating Can be Tricky
  - Count Total Expected KW Hours over life time.
  - Systems units cost as much as solar systems in certain wind regimes.
  - At the \$85K–\$100K mark wind turbines costs start to go down.
  - Some Machines can be off-grid; most are grid tied.
  - A Guess: Currently in Indiana there are ~50 Skystreams, ~20 Bergy 10KW, ~10 Other grid tied turbines, ? off-grid turbines. (90% are located north of Indy)

1 KW and Under (Battery Charging/Off Grid)

\$5,000 - \$10,000 installed

Others:

- MANY OTHERS IN THIS RANGE
- Bergey
- Kestrel



## Skystream 3.7

- 3.7 meter blades
- not 3.7 KW
- 1.8 KW
- Grid Tied
- Some Problems at First
- Much Improved
- Very Popular
- Easy to install
- about \$15K
- shorter towers (33' - 45')
- 300 – 400 KW hours per month in 12 mph average wind speed
- “maintenance free”





## Evance – Iskra 5KW

- Grid Tied
- New to Market
- Advanced Technology
- Good Track Record
- Moderate to Difficult Installation
- 60' - 80' towers
- about \$45K
- 600 KW hours per month in 12 mph average wind speed
- yearly maintenance

### Others in this Range:

- 6KW Proven
- 3KW Kestrel
- Other New Entries



## Bergey 10 KW

- Grid Tied
- Proven Track Record
- Difficult Installation
- 100' - 120' towers
- \$65K
- 1000 KW hours per month in 12 mph average wind speed
- "maintenance free"

## Others in this Range:

- 15W Proven
- Other New Entries



## Jacobs 20 KW

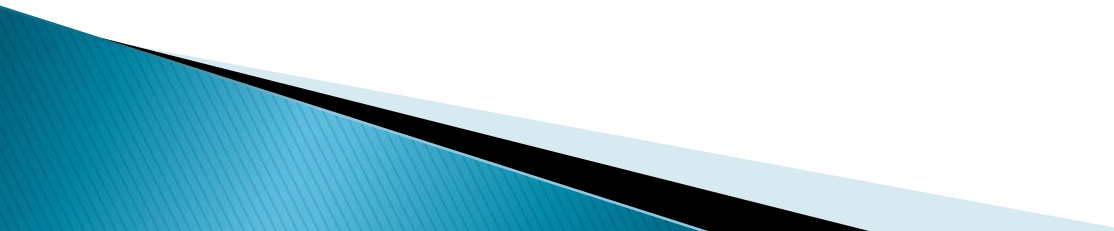
- Grid Tied
- Proven Track Record
- Difficult Installation
- 100' - 120' towers
- \$100K
- 2200 KW hours per month in 12 mph average wind speed
- Intensive maintenance
- First Significant Decrease in Installed Price/Watt

## Others in this Range:

- Other New Entries



# Planning for a Small Wind Turbine

- ▶ Permitting
  - ▶ Site Selection
  - ▶ Turbine Selection
  - ▶ Tower Selection
  - ▶ Foundation
  - ▶ Wiring
  - ▶ Erecting the Tower and Turbine
  - ▶ Interconnection
  - ▶ Commissioning
- 









# Economics of Small Wind

- Payback
  - Difficult to Nail Down
  - Inflation Dependent
  - Metering Dependent
  - Policy Dependant
  - Resource Dependant
  - Long payback time with conservative estimations